

What is claimed is:

1. A wireless base station that makes a wireless connection with a mobile station by forming an array antenna pattern using a plurality of antennas, the wireless base station comprising:

transmitting means for forming an omnidirectional pattern to transmit a control signal intermittently via a control channel; and

receiving means for forming an array antenna pattern to receive a control signal transmitted from a mobile station via the control channel.

2. The wireless base station of Claim 1, wherein the receiving means includes:

calculating means for calculating a weight coefficient for each of the plurality of antennas based on an input signal received by each antenna, the input signals corresponding to a fixed bit pattern in the control signal; and

combining means for combining, using the calculated weight coefficients, an input signal received by each antenna to obtain a reception signal.

3. The wireless base station of Claim 1, wherein:

25 the control signal received by the receiving means is a message from the mobile station requesting the wireless base station to allocate a traffic channel; and

the transmitting means further forms an array antenna pattern and raises transmission power to transmit a message  
30 allocating a traffic channel to the mobile station via the control channel.

4. The wireless base station of Claim 1, wherein:

the control signal transmitted by the mobile station is a  
35 message requesting the wireless base station to allocate a traffic channel; and

the transmitting means further forms an omnidirectional pattern to transmit a message allocating a traffic channel to the mobile station via the control channel.

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5. The wireless base station of Claim 1, wherein:

the control message transmitted by the mobile station is a message requesting the wireless base station to allocate a traffic channel; and

45 the transmitting means further determines whether a message allocating a traffic channel should be transmitted to the

mobile station via the control channel using an omnidirectional pattern or an array antenna pattern, and forms the determined pattern to transmit the message allocating a traffic channel.

6. The wireless base station of Claim 2, wherein:  
the control signal received by the receiving means is a message from the mobile station requesting the wireless base station to allocate a traffic channel; and  
the transmitting means further forms an array antenna pattern and raises transmission power to transmit a message allocating a traffic channel to the mobile station via the control channel.

7. The wireless base station of Claim 2, wherein the control signal transmitted by the mobile station is a message requesting the wireless base station to allocate a traffic channel; and

the transmitting means further forms an omnidirectional pattern to transmit a message allocating a traffic channel to the mobile station via the control channel.

8. The wireless base station of Claim 2, wherein the

70 control message transmitted by the mobile station is a message requesting the wireless base station to allocate a traffic channel; and

the transmitting means further determines whether a message allocating a traffic channel should be transmitted to the  
75 mobile station via the control channel using an omnidirectional pattern or an array antenna pattern, and forms the determined pattern to transmit the message allocating a traffic channel.

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